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Quality Engineering Test Report

SERIES: SP-300 300W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.SP-300-5 5V / 50A D.SP-300-13.5 13.5V / 21A G.SP-300-27 27V / 11A
B.SP-300-7.5 7.5V / 34A E.SP-300-15 15V / 19A H.SP-300-48 48V / 6.25A
C.SP-300-12 12V / 24A F.SP-300-24 24V / 12.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:88~264VAC O/P:FULL LOAD	A:52.4VAC~267VAC	P
2	LINE REGULATION	I/P:88~264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.3% D: ±0.3% E: ±0.3% F: ±0.3% G: ±0.2% H: ±0.2% ±0.2%	A: -0.118% ~ 0% B: 0% ~ 0% C: 0.05% ~ 0.05% D: -0.04% ~ -0.04% E: 0% ~ 0% F: -0.02% ~ 0% G: +0% ~ +0% H: 0% ~ 0%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: ±1% B: ±1% C: ±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% ±0.5%	A: -0.118% ~ +0% B: -0.33% ~ +0.24% C: -0.1% ~ +0.15% D: -0.09% ~ +0.09% E: -0.04% ~ +0.04% F: -0.07% ~ +0.05% G: -0.06% ~ +0.1% H: -0.09% ~ +0.16%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:88~264VAC SPEC: O/P:0% TO FULL LOAD A: ±2% B: ±2% C: ±1% D: ±1% E: ±1% F: ±1% G: ±1% H: ±1% ±1%	A: -0% ~ +0.118% B: -0.66% ~ 0% C: -0.26% ~ +0% D: -0.19% ~ +0.05% E: -0.05% ~ -0.16% F: -0.15% ~ -0.03% G: -0.2% ~ +0.1% H: -0.22% ~ +0.04%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: 150mV B: 150mV C: 150mV D: 150mV E: 150mV F: 150mV G: 200mV H: 240mV	A: 87mV B: 117mV C: 69mV D: 57mV E: 87mV F: 70mV G: 60mV H: 55mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:2A O/P:FULL LOAD	G :1.516A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:36A O/P: FULL LOAD	G :27.296A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 4.5~5.7V O/P:MIN. LOAD B: 6~9V C: 10~13.2V D: 12~15V E: 13.5~18V F: 20~26.4V G: 26~32V H: 41~56V	A: 4.35V~6.21V B: 5.58V~9.68V C: 9.276V~13.824V D: 11.41V~16.29V E: 12.43V~18.88V F: 17.9V~27.55V G: 24.75V~35.92V H: 39.69V~58.20V	P
9	SET UP TIME	I/P:230VAC SPEC:1500mS O/P:FULL LOAD	G: 745.1mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	G: 45.85mS	P
11	EFFICIENCY	I/P:230VAC SPEC: A:75% O/P:FULL LOAD B:80% C:83% D:83% E:83% F:85% G:86% H:85%	A:77.86% B:81.06% C:84.16% D:85.13% E:83.81% F:86.57% G:86.18% H:87.87%	P

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>12</td><td>OVER LOAD
PROTECTION</td><td>I/P:230VAC SPEC: 105%~135%
O/P:TESTING</td><td>A:116.7%
B:120%
C:120%
D:132.4%
E:116.5%
F:123.4%
G:116%
H:118.77%</td><td>P</td></tr>
<tr><td>13</td><td>OVER VOLTAGE
PROTECTION</td><td>I/P:230VAC SPEC: A:5.75V~6.75V
O/P:TESTING B:9.4V~10.9V
C:13.8V~16.2V
D:15.5V~18.2V
E:18V~21V
F:27.6V~32.4V
G:33.7V~39.2V
H:57.6V~67.2V</td><td>A:6.42V
B:9.59V
C:14.4V
D:17.45V
E:19.84V
F:28.78V
G:37.8V
H:58.21V</td><td>P</td></tr>
<tr><td>14</td><td>OVER TEMPERATURE
PROTECTION & FAN
ON/OFF TEST</td><td>I/P:230VAC SPEC: RTH1 or RTH2
O/P:FULL LOAD OTP >= 70°C
FAN ON >= 50°C
FAN OFF <= 45°C</td><td>A:
OTP : 76.5°C
FAN ON : 57°C
FAN OFF: 48°C</td><td>P</td></tr>
<tr><td>15</td><td>POWER FACTOR</td><td>I/P:230VAC SPEC: 0.95
O/P:FULL LOAD</td><td>A: 0.989</td><td>P</td></tr>
<tr><td>16</td><td>GROUND LEAKAGE
CURRENT</td><td>I/P:240VAC SPEC: L-FG--<1mA
N-FG--<1mA</td><td>A: L-FG:0.77mA
N-FG:0.76mA</td><td>P</td></tr>
<tr><td>17</td><td>INSULATION
RESISTANCE</td><td>SPEC: I/P-O/P: 500VDC/100M Ohms MIN.
I/P-FG: 500VDC/100M Ohms MIN.
O/P-FG: 500VDC/100M Ohms MIN.</td><td>A: O/P-FG >100M Ohms
I/P-O/P >100M Ohms
I/P-FG >100M Ohms</td><td>P</td></tr>
<tr><td>18</td><td>DIELECTRIC /
WITHSTAND
VOLTAGE</td><td>SPEC: I/P- O/P: 3KVAC/ 1 min.
(10mA CUT-OFF)
I/P - FG: 1.5KVAC/ 1 min.
(10mA CUT-OFF)
O/P -FG: 0.5KVAC/ 1 min.
(10mA CUT-OFF)</td><td>G: I/P-O/P :0.002mA
I/P-FG :3.74mA
O/P-FG :6.81mA</td><td>P</td></tr>
<tr><td>19</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P: FULL LOAD
TA:30.4°C BURN-IN DURATION : 1.5 hrs</td><td>A:NON BREAK</td><td>P</td></tr>
<tr><td>20</td><td>ENVIRONMENT TEST</td><td>HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:36.7°C</td><td>A: AFTER 14 hrs
NON BREAK</td><td>P</td></tr>
<tr><td>21</td><td>TEMPERATURE RISE
TEST T rise OF PARTS</td><td colspan="2">A: I/P :230VAC AFTER 1.5 hr BURN-IN
O/P :FULL LOAD TA:30.4°C
<table>
<tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td>BD1</td><td>BRIDGE DIODE</td><td>47.0°C</td><td>16.6°C</td></tr>
<tr><td>Q6</td><td>MAIN TRANSISTOR</td><td>51.9°C</td><td>21.5°C</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>59.4°C</td><td>29°C</td></tr>
<tr><td>D11</td><td>O/P DIODE</td><td>80.1.°C</td><td>49.7°C</td></tr>
<tr><td>C33</td><td>O/P FILTER CAPACITOR</td><td>53.5°C</td><td>23.1°C</td></tr>
<tr><td>L1</td><td>O/P CHOCK</td><td>70.5°C</td><td>40.1°C</td></tr>
<tr><td>RTH1</td><td>SURGE DIODE</td><td>55.5°C</td><td>25.1°C</td></tr>
<tr><td>RTH2</td><td>SURGE DIODE</td><td>46.1°C</td><td>15.7°C</td></tr>
<tr><td>L3</td><td>O/P CHOCK</td><td>50.6°C</td><td>20.2°C</td></tr>
</table></td><td>P</td></tr>
<tr><td>22</td><td>LIFE CYCLE</td><td colspan="2">A: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25°C Tc33:48.1°C Life: 339518hrs
I/P:230VAC O/P:FULL LOAD Ta:45°C Tc33:55.9°C Life: 197674hrs</td><td>P</td></tr>
<tr><td>23</td><td>CRITICAL COMPONENT
RECORD
(FOR QC INSPECTION
REFERENCE ONLY)</td><td colspan="3">A: FUSE :6.3AL/250V
BRIDGE DIODE :D10XB60
LINE FILTER :TF360 ET-28
TRANSFOMER :TF362-R1 ETD-39
POWER SWITCHER :2SK2652 TO-3P
OUTPUT DIODE :ESAE83-004 60A/40V
OUTPUT CAPACITOR :RUBYCON 3300uF/10V 105°C YXG
INPUT CAPACITOR :HITACHI 150uF/400V 85°C HP3
P.C.B :SP-300N-R5 FR-4 2 OZ DS</td></tr>
</table>

PREVIOUS NEXT

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
980519	SP-300	PASS	H.C.LIOU	Max Lin
20010420	PRODUCT DA13021298 SP-300-5,7.5	PASS	VINCENT	Max Lin
20010515	PRODUCT CA14053897 SP-300-7.5	PASS	VINCENT	Max Lin
20010531	PRODUCT A104B02A SP-300-5,12	PASS	VINCENT	Max Lin
20020605	PRODUCT A2005B26D 27V	PASS	VINCENT	Max Lin

PREVIOUS